

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
14 December 2000 (14.12.2000)

PCT

(10) International Publication Number  
**WO 00/75481 A1**

- (51) International Patent Classification<sup>7</sup>: **E21B 33/138, 43/02**
- (21) International Application Number: **PCT/EP99/03946**
- (22) International Filing Date: **3 June 1999 (03.06.1999)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (71) Applicant (*for all designated States except CA, FR, US*): **SOFITECH N.V. [BE/BE]; Rue de Stalle 142, B-1180 Brussels (BE).**
- (71) Applicant (*for CA only*): **SCHLUMBERGER CANADA LIMITED [CA/CA]; 24th floor, Monenco Place, 801 6th Avenue, S.W., Calgary, Alberta T2P 3W2 (CA).**
- (71) Applicant (*for FR only*): **COMPAGNIE DES SERVICES DOWELL SCHLUMBERGER [FR/FR]; 50, avenue Jean-Jaurès, F-92541 Montrouge (FR).**
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **JOHNSON, Les [CA/CA]; Schlumberger Dowell, 11042 84 avenue, Grande Prairie, Alberta T8V 6H2 (CA). ARSANIOUS, Kamal [EG/CA]; Schlumberger Dowell, 11042 84 avenue, Grande Prairie, Alberta T8V 6H2 (CA). TONEY, Allen, R. [CA/CA]; 23 Edgington Avenue, Red Deer, Alberta**
- (74) Agent: **MENES, Catherine; Etudes et Productions Schlumberger, Division Dowell, 26, rue de la Cavée, Boîte postale 202, F-92142 Clamart Cedex (FR).**
- (74) Agent: **MENES, Catherine; Etudes et Productions Schlumberger, Division Dowell, 26, rue de la Cavée, Boîte postale 202, F-92142 Clamart Cedex (FR).**
- (81) Designated States (*national*): **AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW.**
- (84) Designated States (*regional*): **ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).**

Published:

— *With international search report.*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**WO 00/75481 A1**

(54) Title: **SHEAR-SENSITIVE PLUGGING FLUID FOR PLUGGING AND A METHOD FOR PLUGGING A SUBTERRANEAN FORMATION ZONE**

(57) Abstract: A plugging fluid for plugging a subterranean formation zone surrounding a drill hole consisting of an emulsion comprising an oil phase containing an oil, an emulsifier and 2.4 to 4 kg of cement per liter of oil and an aqueous phase containing water and 12-16g of polysaccharide per liter of water, wherein the oil to water volume ratio ranges from 20:80 to 25:75. Upon shearing, the emulsion inverts so that the rupture of the emulsion droplets releases the cement into the water phase thus providing metallic divalent ion to crosslink with the polysaccharides and forming a gel structure.